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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,362

08/14/2006

Takuya Tsukagoshi

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07/24/2009

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ALEXANDRIA, VA 22320-4850

EXAMINER

CHANG, AUDREY Y

ART UNIT

PAPER NUMBER

2872

MAIL DATE

DELIVERY MODE

07/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,362	Applicant(s) TSUKAGOSHI ET AL.	
	Examiner Audrey Y. Chang	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13-20, 22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-20, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 28, 2009 has been entered.
2. This Office Action is also in response to applicant's amendment filed on April 28, 2009 which has been entered into the file.
3. By this amendment, the applicant has amended claims 1-10, 13-20, and 22-23.
4. Claims 1-10, 13-20 and 22-23 remain pending in this application.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: **claims 1, 9, 15 and 23 have been amended** to include the phrases "*search data page*", "*encoded search image*", "*the search image*", "*encoding search information*" (*claim 15*), and "*search imaging device*" (*claims 15 and 23*).

It is not clear if the "*search data page*" is referred to "search dedicated data", (paragraph [0064]) of the original specification.

It is not clear if the "*encoded search image*", "the search image" and "*encoded search information*" are referred to the "image data" of the originally filed specification.

It is not clear "*search imaging device*" is referred to "retrieve imaging device" of the original specification.

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If the above mentioned statements are true then *please amend the specification* to use consistent terminology through the specification and claims **to give the proper antecedent basis**. The examiner respectfully suggests that the "search dedicated data page (or block)", "encoded search information" and "search imaging device" are better terms for describing the searching operation.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. **Claims 1-10, 13-20 and 22-23 are rejected under 35 U.S.C. 112, first paragraph**, as based on a disclosure which is not enabling. The requirements for the data pages for hologram recording also encoded with the encoded search image and the step and arrangement for using the determined address to identify the reproducing reference beam that illuminates the holographic recording medium to reproduce the target data page" is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). It is noted that the encoded search image needed to be also recorded in the plurality of data pages in the holograms in the first place before the search process can take place. It is also noted that the target data page cannot be reproduced by any reproducing reference beam but by the reproducing reference beam that is identified by the determined address.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claims 1-10, 13-20 and 22-23 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The phrase “a method for searching holograms” recited in claims 1 and 9, seem to be incomplete with the body of the claims. It perhaps better reads as “a method for searching *target data page* in holograms”.

The phrase “being multiplexed” is confusing. The multiplexing is a recording scheme so it is better read as “having digital information including a plurality of data pages multiplexedly recorded thereon”.

The phrase “to transmit a diffracted beam when irradiated by a light beam” is not really corrected. Diffracted light can only be generated or transmitted when the hologram recording medium is illumined by the object bam (or the modulated signal beam in this case) and reference beam used to record the hologram, not *any* light beam.

The phrase “a target data page matching the search image” recited in claim 1 is not completely correct since not the whole but only portion of the target data page would match the search image.

The “data image” and the paragraph associated with is recited in claims 1 and 9 are very confusing since it is not clear how does this “data image” relate to “data pages”, “search data page” and “target data page” defined in the earlier part of the claims. This makes the scopes of the claims very unclear. It is no way to interpret what is considered to be this “data image”.

Also with respect to claim 9, the phrase “for each data block” recited in claim last paragraph is very confusing since there are data blocks defined for the search data page and data blocks defined for the data pages. It is not clear the data block referred here is for which data block. This makes the scopes of the claims very unclear.

The phrase “the hologram comprising a plurality of data pages” recited in claim 15 is wrong. It is noted since the specification and claims teach that the plurality of data pages are recorded in multiplexing scheme, (noted the multiple diffracted light beams produced as explicitly claimed in the claim), the

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plurality data pages cannot be recorded as a single hologram but as a plurality of holograms (i.e. one page of data recorded as a hologram).

The paragraph "reproducing image device ... to irradiation with a reproduction reference beam from the reference optical system" as recited in claim 15 seems to have no connection with earlier part of the claim. It is not clear if the reproduction has anything to do with the determination of the address recited in the earlier part of the claim.

The phrase "data page" recited in claims 17 and 18 is confusing since it is not clear if the data page is referred to the "search data page" or the plurality of data pages for the hologram recording.

It is also not clear how does the "data image" recited in claims 17 and 18 relate to the encoding search information. Or what is considered to be this data image?

The phrase "the signal beam" recited in claim 19 lacks proper antecedent basis from its based claim.

It is not clear why would a plurality of diffracted light beams would be generated as recited in claim 23. This can only be the case if there are multiple data pages multiplexedly recorded in the hologram recording medium at first place.

The paragraph "a reproducing imaging device ... irradiation with a reproducing reference beam from the reference optical system" recited in claim 23 seems to have no connection with earlier part of the claim. It is not clear if the reproduction has anything to do with the determination of the address recited in the earlier part of the claim.

It is also not clear what is the phrase "a data page" referenced to in claim 23 of the last paragraph.

Allowable Subject Matter

10. The following is a statement of reasons for the indication of allowable subject matter: of the prior art references considered, none has disclosed a method for searching target data page in holograms and a holographic recording and reproducing apparatus that is comprised of an object optical system and a

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reference optical system for generating object beam and reference respectively to record multiplexedly a plurality of data pages in a hologram recording medium wherein each data page has a plurality of equally divided data blocks, and a spatial light modulator in the object optical system for modulating a signal beam with a search dedicated data page having a plurality of equally divided data block with at least one data blocks of the search dedicated data block consisting of an encoded searching image. The hologram recording medium is irradiated with the modulated signal beam to generate one or more diffracted beams and detecting a target diffracted beam with the maximum intensity of the one or more diffracted beams. The diffracted beams are generated by the recorded data pages in the holograms that contains encoded search image. Determining an address of the target diffracted beam wherein the address is used to identify a reproducing reference beam and generate the reproducing reference from the reference optical system to illuminate the hologram recording medium to reproduce the target data page recorded in the hologram recording medium. The encoded search image in the at least one data blocks of the search dedicated data page is generated by an encoding method wherein the encoding method also encodes the plurality of data pages for recording such that different number of ON pixels is encoded for each data blocks within a single data page.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (9:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Audrey Y. Chang, Ph.D.

***/Audrey Y. Chang/
Primary Examiner, Art Unit 2872***